

NASA Langley Research Center is actively seeking partnerships to commercialize its Composite Roll Press and Processes technology.

The Market Opportunities

- Main spar and outer skins of turbine blades for the wind power market
- Marine and aircraft industry uses:
 - Structural stiffeners for boat hulls and aircraft floor stringers
 - Wing ribs and bulkheads
- Construction industry uses:
 - Bridge decks
 - Column reinforcements
 - Seismic upgrades
- Bridge between hand lay-up and high volume autoclave manufacturing

The Benefits

- The roll press method produces high quality composite laminates with desirable features including:
 - Consistent gauge thickness
 - High fiber to resin ratio
 - Low porosity
 - Low cost
 - Uniform mechanical properties
- Ability to manufacture large components at room temperature
- Eliminates need for expensive steel or aluminum molds
- Limits exposure to volatile gases

The Technology

The composite roll press is a machine through which composite laminates are processed. With the combination of standard composite laminate build up techniques and the use of unique processing methods, a very high quality part is obtained. Parts processed by

Composite Roll Press and Processes

A roll process method for producing high quality laminates



this method demonstrate near autoclave quality at a fraction of the normal tooling and processing costs. The process allows for the use of dry fibers and room temperature cure matrices. Mold tooling can be of the normal rapid prototype variety tailored to cure temperature of the matrix used. The major attributes of the process are costs that are competitive with traditional processes and a part quality far superior to that of hand processed materials and the ability to govern material properties.

The roll press shown in the figure above is a demonstration prototype designed to process high quality composite laminates. The roll press consists of several components including the roller mechanism, in-feed, out-feed roller supports, and pressure plate vacuum bag assembly. The processes include the dry material preparation, material bagging, wetting out, roll processing and forming applications.

Additional Information

To discuss in detail how this technology can profit you and your business, please contact:

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